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RTTY JOURNAL

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To:
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From:
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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

April 22, 1991

In the matter of: Petition RM-7681

To: The Commission

Realizing this letter will not reach the FCC offices in time to be entered, I have elected to respond with an agreement rather than an argument. I therefore concur with the arguments and conclusions drawn by Mr George W. Henry, Jr. in his letter to the Commission dated April 21, 1991 a copy of which is attached.

Dale S. Sinner
Amateur radio operator W6IWO
Publisher of RTTY JOURNAL

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1. **The petition claims that HF Packet Radio is a proven networking mode:**

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This is in fact the same claim made by the American Radio Relay League in their petition RM-7248. As discussed in many responses to RM7248, HF packet radio as it existed in 1990 and as it exists at this date in 1991 has many technical problems that limit its effectiveness. I refer the commission to my response to RM-7248, filed on March 5, 1990 for full details.

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In brief, HF Packet radio still suffers from a poor choice of modulation and modem parameters. Simple incoherent FSK modulation using 200 Hz shift for 300 baud data does not work [illegible]

2. The petition requests special frequency sub-bands.

The petitioners have requested the following sub-bands:

3.590 to 3.615 MHz
7.075 to 7.100 MHz
10.140 to 10.150 MHz
14.090 to 14.115 MHz
21.075 to 21.100 MHz
28.090 to 28.115 MHz

These are quite sizable portions of our existing amateur HF bands. As noted by the ARRL in their petition RM-7248, an HF packet signal has a transmitted bandwidth of approximately 2 kHz - very close to that of a SSB voice station. All of the requested sub-bands are within frequency ranges traditionally reserved for truly narrow-bandwidth modes - Morse code (CW) and radio teletype (RTTY). A CW or RTTY amateur signal rarely requires more than a 500 Hz bandwidth. HF packet is very spectrum inefficient and its use results in severe interference to the primary users of these frequencies (CW and RTTY).

The 7.075 to 7.100, 14.090 to 14.115, and 21.075 to 21.100 MHz frequency requests are particularly ill-advised. These are very heavily used frequencies, used 24 hours per day throughout the world by RTTY and CW radio amateur stations. Operation of wide bandwidth computer-controlled automatic packet radio stations on these frequencies will cause a great deal of interference to present RTTY and CW operators.

I suggest that the 10.140 - 10.150 and 14.100 - 14.150 frequencies are presently under-utilized and here is the place

that HF packet operations should center. I seriously question the need for any 7.0 - 7.3 MHz automated HF packet authorization. This amateur band is much too crowded on a world-wide basis to permit un-attended automatic operation. 21.075 to 21.100 MHz is traditionally a frequency range used world-wide for RTTY and AMTOR operation. HF packet stations in this frequency range cause strong interference to RTTY and and AMTOR. For minimum interference, HF packet stations should choose frequencies below 21.075 MHz or above 21.100 MHz.

Finally, I must state that I strongly disagree with the whole concept of setting-aside special frequency sub-bands for special interest groups, especially for a group that insists on using a wide-bandwidth and inefficient modulation format. It is much more appropriate that an "experimental mode" be permitted only on a "minimum" or even "non-interference" basis to the primary users

"channelization" or sub-band partitioning of our already crowded frequency bands. It particularly makes no sense to request that the FCC set-up special bands for an automated and bandwidth inefficient mode.

3. The petition requests exemption from third-party traffic regulations for HF Packet Radio:

I must assume that the unsaid concern on the part of the petitioners is in regard to automatic relay of messages or traffic that might be otherwise deemed "illegal". A popular sentiment is that only the originating station should be responsible for the contents of traffic entered into the "system". However, this concept has been shown to be at fault - improper message can and are entered. I suggest that this concept be extended by one station - place message content responsibility on BOTH the originating station AND the first "network entry" station. Require the "network entry" station to hold and screen all new messages entered into his station "mailbox". Once the message is screened and accepted by the "network entry" station, it is digitally tagged as "accepted" and may then proceed through other stations in the network to its destination without further screening. Each message should carry in its header the amateur call sign of both the originating and "network entry station". In the event of entry of an inappropriate message, BOTH stations should share equal responsibility. I suggest that the "third-party" traffic restriction cannot be removed and that originating stations and "network entry" stations must understand which messages are

acceptable and which are not.

However, the commission (FCC) must also provide clear guidance to radio amateurs concerning which messages are "acceptable" and which are not. For example, are "ALL US" general information messages acceptable or are they "broadcasts" which are generally not acceptable? What ARE the rules regarding "FOR SALE" messages? Amateurs have had as many different rulings on this point as there are FCC field offices. We need clear and unambiguous guidelines before we can effectively self-police our operations. To date, varying opinions by FCC offices have only compounded the problem, not clarified it.

SUMMARY:

It is this amateur's opinion that Petition RM-7681 has merit and that the time has come to end the "HF Packet STA" first granted in June, 1987. The mode has problems and in many aspects is still "experimental". However, it is also in heavy use and an effective nation-wide data communications network has been established using HF packet radio. Radio amateurs should be encouraged to continue improvements of this mode. However, I see no justification in the establishment of special frequency sub-bands solely for the use of HF packet radio. I also do not agree with total exemption from "third-party traffic" regulation. I therefore suggest that RM-7681 be adopted, but with the following modifications:

1. That "HF Packet Radio" be accepted as a legal HF data mode.

2. That AX.25 be a recommended protocol for HF packet radio but NOT the only data format or protocol that may be used.

3. That modulation and modem parameters NOT be specifically designated for HF packet radio. In particular, 300 baud FSK modulation must NOT be encouraged.

4. That current HF data transmission limits of 300 baud and FSK shifts up to 1000 Hz remain but that other "equivalent bandwidth" modulation forms be permitted. The new forms should include multi-state FSK, PSK, and/or ASK modulation by a single data stream.

5. That specific frequency sub-bands NOT be established for the sole use of HF packet radio.

6. That "third-party" message regulations NOT be waived for